

THAT WHICH IS CLAIMED:

1. A simulated user call test system built in a digital SPC switch, comprising a back process module, a front call control process module and a hardware subsystem for performing a call test, wherein:

the back process module runs on a maintaining platform of the switch for providing an operation interface for a user to perform a call test setup, receiving call test result data transmitted by the front call control process module, and performing display and statistic process;

the front call control process module is included in a main control module of the switch for receiving call test setup parameters provided by the back process module, controlling the hardware subsystem to perform a call test process according to a flowchart and user parameters set, and reporting a result of call test to the back process module;

the hardware subsystem comprises function process units of the digital SPC switch for receiving instructions from the front call control process module, performing test including picking-up or hanging-up phones, detecting signaling tone, dialing, sending test tone, and talking, and reporting test results to the front call control process module.

2. The simulated call test system according to claim 1, wherein the hardware subsystem comprises a loop relay panel, a simulated user interface panel, an interface panel control process element, and a multifunction resource process panel, wherein:

the loop relay panel is used for simulating picking-up or hanging-on a phone in a calling or called user terminal and dial function of DP form by the calling user;

the multifunction resource process panel comprises:

a signal tone detection process module for detecting whether tones, such as the dial tone and busy tone, in the switch are normal or not in the call test process;

a signal tone process module for providing playing of signal tones required in the call test process; and

a dual tone multiple frequency generator for simulating dial function of user terminal in a DTMF form;

the simulated user interface panel connects to the loop relay panel by a user line for providing a simulated user interface in the switch, and initiating a call on the user line when testing; and

the interface panel control process element is provided various timers required in the call test, and connected to the loop relay panel, the simulated user interface panel and the multifunction resource process panel with HW wires, on which inter-working and exchanging is completed by a network, and a control between the front call control process module and resources of the hardware subsystem is realized in a message-driven form by such interface.

3. A test method realized based on built-in modules of a digital SPC switch, comprising the following steps of:

setting related information for a calling and a called user in a simulated call test through a human-machine interface of a back process module by a tester;

transmitting call parameters to a front call control process module through a message channel by the back process module;

initiating the call test after the front call control process module obtains related call test process parameters;

sending, by the front call control process module, instructions to a hardware subsystem within the switch according to a call test control flowchart set;

completing the test process according to the instructions from the front call control process module, and reporting a test result to the front call control process module by the hardware subsystem;

processing the call test result, and collecting to the back process module by the front call control process module; and
displaying the result by the back process module.

4. The test method according to claim 3, wherein the call test control flowchart comprises the following steps of:

(1) first simulating picking-up a phone by a user in an idle state, and entering a state of waiting for dial tone;

(2) after detecting the dial tone, preparing for sending the number, and entering a state of dial;

(3) sending the number called in a DTMF or DP form according to a setup, after sending the number, initiating a pass detection timer, and entering a state of waiting for pass;

(4) receiving the number, analyzing the number, searching for a called user, and feeding ringing back tone by a normal call service system in the switch;

(5) if the called user picks up a phone when detecting the ringing, sending a pass test tone and setting the pass detection timer, and entering a state of a pass test;

(6) after the calling user receives the pass test tone, sending another pass test tone, and, if the calling user is set first to hang up, setting a talk timer, if not, detecting whether there is a busy tone, and, entering a state of talking;

(7) after the called user receives the pass test tone, if the calling user is set first to hang up, detecting whether there is a busy tone, if not, setting a talk timer, and entering a state of talking;

(8) when the talk timers of the calling or called users time out or after a busy tone is detected, simulating user hanging up, and releasing the calling and the called users, thereby a call process is completed.

5. The test method according to claim 4, wherein when sending the number, a dial timer is initiated, after the timer times, one digit of the number called is transmitted according to a DP or a DTMF form set, until all digits are transmitted.

6. The test method according to claim 4, wherein in the step (6), if the pass detection timer for the calling user times out, a pass test tone is also transmitted, if the calling user is set first to hang up, a talk timer is set, otherwise, whether there is a busy tone is detected; in the step (7), when the pass detection timer for the called user times out, if the calling user is set first to hang up, whether there is a busy tone is detected, otherwise, a talk timer is set.